

**Embargoed until 1:30 P.M. on 02/03/2016**

# **RIPEC Analysis: Truck Tolling Proposal and the RhodeWorks Infrastructure Improvement Program**

**February 2016**



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## Introduction

There is no doubt that a substantial amount of construction work is required to return Rhode Island's bridges to a state of good repair. According to the U.S. Department of Transportation, Rhode Island is currently ranked the worst in the nation for bridge condition, with 23.1 percent of the deck area in the state classified as structurally deficient as of 2014 (the most recent year for which federal data is available).<sup>1</sup> In recent years, state policymakers have sought to provide additional funding for transportation purposes by increasing the gasoline and diesel taxes, raising registration and other transportation-related fees and committing funds from the Rhode Island Capital Plan Fund (RICAP).

Despite the funding increases made over the last several years, some have argued that Rhode Island still has insufficient funding to return the state's infrastructure network to a state of good repair. If no additional funding is provided, the Rhode Island Department of Transportation (RIDOT) estimates that it will take until 2032 for Rhode Island to achieve the federally-mandated target. Furthermore, without additional funding, RIDOT indicates that the condition of the state's bridges will continue to decline for several years before beginning to improve. RIDOT projects that structural deficiency will nearly double over the next five years, reaching approximately 45.0 percent in 2021, before beginning to decline.<sup>2</sup>

In response, Governor Gina Raimondo unveiled a proposal, referred to as RhodeWorks, intended to address the deteriorating condition of Rhode Island's bridges and the state's broader transportation infrastructure. According to RIDOT, the RhodeWorks program is a faster and more cost-effective plan for addressing the state's bridges. The program calls for a surge in bridge spending that will enable the state to achieve the federally-mandated minimum target of 90.0 percent structurally sufficient bridges by 2025. Under the RhodeWorks program, RIDOT projects that the state will achieve 97.0 percent structural sufficiency in 2032.

In addition to providing funding for bridge repairs, the RhodeWorks program also includes additional funding for other aspects of the state's transportation network. Specifically, the program calls for increased investment (above what would be possible if no additional funding is provided) totaling \$30.0 million for pavement capital, \$37.1 million for transportation alternatives, and \$80.0 million for transit capital over the 10-year period between FY2016 and FY2025.<sup>3</sup>

Finally, the RhodeWorks program provides \$400.0 million in state funding to reconstruct the Route 6/10 Interchange, which serves as a critical link for travel from I-295, western Rhode Island, and south-central Rhode Island into downtown Providence. According to a 2014 RIDOT report, eight of the 11 bridges that constitute the Interchange are in poor condition, and many of the

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<sup>1</sup> United States Department of Transportation, *State Transportation Statistics 2015*, November 13, 2015.

<sup>2</sup> RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP): Proposal for FY 2016 – FY 2025," October 27, 2015.

<sup>3</sup> RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP): Proposal for FY 2016 – FY 2025," October 27, 2015.

structures have been shored up using temporary measures dating back to the 1990s. With an estimated cost of between \$400.0 and \$500.0 million, reconstruction is “approaching the scope and scale of the Iway project.”<sup>4</sup> Addressing the Interchange is vital to the health of the state’s transportation system, but the project has been delayed for decades due to a lack of resources. Despite its importance, no funding has been identified for the Route 6/10 Interchange project within existing resources.<sup>5</sup>

During the 2015 legislative session, S. 0997 and H. 6321 were introduced to authorize the Governor’s proposal. The original legislation designed to fund the RhodeWorks transportation program provided for RIDOT to establish and collect tolls on selected large commercial trucks (class 8 and above) traveling over designated bridges within Rhode Island. The proposal called for approximately \$60.0 million in toll revenue to be collected annually. The original proposal also allowed for up to \$600.0 million in toll-backed revenue bonds to help finance repair, reconstruction and maintenance of selected bridges. Although the Senate approved the bill, the House opted not to put the proposal up for a vote prior to the close of the 2015 legislative session.

On December 4, 2015, President Obama signed into law the Fixing America’s Surface Transportation (FAST) Act. The FAST Act is a five-year federal transportation funding bill that increases the amount of federal funding that states receive annually for transportation purposes. According to RIDOT, the FAST Act will provide Rhode Island with \$102.7 million more in federal funding for roads and bridges than initially anticipated over the next five years between FY 2016 and FY 2020. Although the additional funding is not guaranteed beyond FY 2020, RIDOT estimates that an additional \$155.5 million will be provided for roads and bridges over the FY 2021-FY 2025 period.

Because of the FAST Act, the amount of additional resources that must be provided to RIDOT to fund the RhodeWorks transportation restoration program has declined. On January 28, 2016, new legislation (H. 7409/S. 2247) was introduced in the General Assembly to fund the RhodeWorks program that takes this additional federal funding into account. This new proposal calls for the authorization of a \$45.0 million annual tolling program on the same set of large commercial trucks, and for the authorization of up to \$300.0 million in additional Grant Anticipation Revenue Vehicle (GARVEE) debt for transportation purposes.

In this report, RIPEC analyzes RIDOT’s cash flow requirements based on the RhodeWorks Transportation Improvement Program (TIP). RIPEC then examines the annual funding provided by the proposal currently under consideration in the General Assembly, and compares that to RIDOT’s annual funding requirements. This report also considers three alternative models for funding the RhodeWorks program. The first model includes borrowing only, with no tolling program or other sources of new or increased revenue. In the remaining two models, RIPEC considers the implications of reducing the \$45.0 million tolling program and increasing the \$300.0

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<sup>4</sup> RIDOT report, “A Bridge to Everywhere,” January 2014.

<sup>5</sup> RIDOT, “Rhode Works Ten-Year Transportation Improvement Program (TIP): Proposal for FY 2016 – FY 2025,” October 27, 2015.

million GARVEE bond currently under consideration. This report includes a 10-year analysis covering the FY 2016-FY 2025 period, as well as a longer-term perspective covering the FY 2016-FY 2032 period.

Finally, this report includes a section devoted to revenue analysis, where RIPEC details a set of principles it believes should guide tax policy decisions, and considers how well the proposed tolling program meets those principles.

<b>RIPEC's Cash Flow Analysis</b>
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**RIDOT Funding Needs**

The first step in RIPEC's cash flow analysis is to identify and understand RIDOT's funding needs. That is, how much funding does RIDOT estimate is required annually to restore Rhode Island's transportation infrastructure and maintain it in a state of good repair? To answer this question, RIPEC uses RIDOT's publicly-filed 10-year Transportation Improvement Plan (TIP) proposal, which details the proposed funding allocations for all transportation-related projects and programs (including operations, maintenance, and capital investment) under the RhodeWorks initiative for the 10-year period from FY 2016 through FY 2025.<sup>6</sup>

Table 1 indicates RIDOT's projected annual transportation-related expenditure for the 10-year period (excluding any federally-funded transit portion of the 6/10 project). Note that this report, and all tables contained in it, refer to federal fiscal years rather than calendar years. Federal fiscal years end on September 30 of the calendar year (e.g. FY 2016 ends on September 30, 2016).

Expenditure Category	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Bridge Maintenance + Capital	\$ 150.9	\$ 168.6	\$ 193.9	\$ 154.6	\$ 125.1	\$ 119.2	\$ 104.9	\$ 107.7	\$ 83.8	\$ 102.2	\$ 1,311.0
Pavement Maintenance + Capital	64.7	74.1	60.0	71.8	72.1	57.2	74.8	80.6	94.6	131.8	781.7
Transit Operations + Capital (RIDOT)	10.9	12.1	12.3	14.8	15.5	15.6	20.7	21.8	22.0	22.5	168.2
Route 6/10 Reconstruction (State)	-	20.0	100.0	100.0	100.0	80.0	-	-	-	-	400.0
Existing Debt Service	67.4	68.2	61.8	91.6	98.5	105.7	90.6	84.0	69.7	35.4	772.9
Other Capital, Maintenance, Operations	183.4	204.9	199.8	191.4	193.0	204.0	214.6	211.5	234.1	212.3	2,049.1
<b>Total Expenditure</b>	<b>\$ 477.4</b>	<b>\$ 547.9</b>	<b>\$ 627.8</b>	<b>\$ 624.3</b>	<b>\$ 604.1</b>	<b>\$ 581.6</b>	<b>\$ 505.7</b>	<b>\$ 505.7</b>	<b>\$ 504.2</b>	<b>\$ 504.2</b>	<b>\$ 5,482.9</b>

Note: The category "Existing Debt Service" takes into account the refinancing of existing GARVEE debt called for under both the original and current RhodeWorks proposals.  
 Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIPEC Calculations.

**RIDOT Current Funding**

The second step in the analysis is to determine how much funding RIDOT expects to receive annually under current law; RIPEC once again refers to RIDOT's TIP as a starting point. The TIP includes an estimate of all state, federal highway, and federal non-highway revenue RIDOT expects to receive on an annual basis over the FY 2016-FY 2025 period. In addition to revenues provided under current law, the TIP estimate also includes \$500.0 million in toll bond proceeds originally called for under the RhodeWorks proposal, \$400.0 million in federal New Starts funding for the transit portion of the Route 6/10 Interchange project that is not guaranteed, and \$180.0

<sup>6</sup> RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 – FY 2025," October 27, 2015.

million in additional RICAP funding for projects that the state has indicated will not be provided. To best estimate the current funding available for RIDOT, these amounts have been subtracted.

Finally, the additional federal funding Rhode Island can expect to receive annually as a result of the FAST Act was added to the TIP funding estimate. The FAST Act, passed in December of 2015, is a five-year federal transportation funding bill that increases the amount of federal funding states receive annually for transportation purposes. RIDOT estimates that the FAST Act will provide Rhode Island with nearly \$260.0 million more than previously anticipated in federal funding for roads and bridges over the next 10 years. RIPEC estimates that the FAST Act will also provide the state with nearly \$30.0 million in additional federal funding for transit over the 10-year period. Table 2 indicates the estimated annual funding RIDOT is projected to receive under current law, taking the above-mentioned changes into account.

<b>Funding Source</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Total</b>
Total RIDOT TIP Funding Sources	\$ 477.5	\$ 548.0	\$ 627.8	\$ 644.3	\$ 654.1	\$ 631.7	\$ 605.7	\$ 605.7	\$ 584.2	\$ 504.2	\$ 5,883.2
Toll Bond Proceeds	(25.0)	(45.0)	(125.0)	(125.0)	(100.0)	(80.0)	-	-	-	-	(500.0)
FTA New Starts (6/10 Transit)	-	-	-	(20.0)	(50.0)	(50.0)	(100.0)	(100.0)	(80.0)	-	(400.0)
RICAP for Projects	-	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(180.0)
FAST Act Apportionments	10.7	15.3	20.2	25.4	31.1	31.1	31.1	31.1	31.1	31.1	258.2
FAST Act Transit	1.3	1.9	2.4	2.9	3.5	3.5	3.5	3.5	3.5	3.5	29.5
<b>Total Funding</b>	<b>\$ 464.5</b>	<b>\$ 500.2</b>	<b>\$ 505.4</b>	<b>\$ 507.6</b>	<b>\$ 518.7</b>	<b>\$ 516.3</b>	<b>\$ 520.3</b>	<b>\$ 520.3</b>	<b>\$ 518.8</b>	<b>\$ 518.8</b>	<b>\$ 5,090.9</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIPEC Calculations.

The third step in RIPEC's cash flow analysis is to calculate the annual gap between existing revenues and RIDOT's estimated funding requirements. In other words, how much additional funding is required for RIDOT to accomplish the 10-year RhodeWorks transportation program as established in the TIP?

Table 3 indicates that RIDOT faces a total funding shortfall of \$392.0 million over the 10-year period. However, as this table demonstrates, RIDOT only experiences a shortfall during the first six years of the program (FY 2016-FY 2021); that shortfall totals just over \$450.0 million over the six-year period. From FY2021 on, RIDOT's annual revenue exceeds projected expenditure, creating a surplus of unallocated funds totaling nearly \$59.0 million between FY 2021 and FY 2025.

	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Total</b>
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 5,090.9
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	5,482.9
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ (392.0)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIPEC Calculations.

Table 3 illustrates the short-term nature of the funding problem faced by RIDOT. According to RIDOT, the RhodeWorks program is a faster and more cost-effective plan for addressing the state's bridges, and for achieving the federally-mandated minimum target of 90.0 percent structural sufficiency. The plan calls for a surge in bridge expenditure during the first five years of the program, which enables RIDOT to address a greater number of bridges before they fall into deficiency. By investing more in bridge preservation efforts up front, fewer bridges will become

structurally deficient over time, making it possible to achieve the minimum goal of 90.0 percent structural sufficiency earlier than would be possible without the surge.

Furthermore, since preservation activities are significantly less expensive than rehabilitation or reconstruction, investing more on preservation up front saves money in the long term by avoiding the need for more costly repairs later on. According to this logic, a short-term spending increase should lead to a long-term funding surplus. In other words, after the initial five-year spending surge is complete, existing funding should provide more than enough resources for on-going investment in bridges. This long-term surplus can then be reallocated, thus increasing the resources RIDOT has available in the later years to invest in other components of the Rhode Island transportation network.

The final step in RIPEC's analysis is to identify various options for filling the funding gap that exists for the first six years of the RhodeWorks program. This portion of the analysis is addressed in the next section of this report.

### **Funding Alternatives for RhodeWorks: 10-Year Cash Flow Analysis**

RIPEC's goal in this section of the report is to identify and examine the implications of various funding options, or models, that meet RIDOT's annual revenue requirements as publicly stated in their 10-year TIP. RIPEC compares the funding proposal currently under consideration in the Rhode Island General Assembly with alternative options. This report focuses on the two potential funding mechanisms currently under consideration – that is, a new GARVEE bond, which borrows against future federal highway funds, and tolling. More specifically, RIPEC examines the implications of varying the size of the borrowing and the amount of toll revenue collected annually. As the following discussion will make clear, even with a large tolling program, the short-term spending surge called for in the RhodeWorks plan requires substantial borrowing to meet RIDOT's annual cash flow needs.

The three models that RIPEC creates and presents here (apart from the funding proposal currently under consideration in the General Assembly) provide at least enough funding for RIDOT to follow the RhodeWorks capital plan every year, including the proposed bridge work, the Route 6/10 project, transit activities, and all other proposed projects and programs as scheduled.

#### **The RhodeWorks Funding Proposal Currently under Legislative Consideration**

The "Rhode Island Bridge Replacement, Reconstruction and Maintenance Fund" Act currently under consideration in the Rhode Island General Assembly authorizes a maximum 15-year GARVEE bond of \$300.0 million. The bill also authorizes a maximum toll rate of \$20.00 to travel through Rhode Island on I-95 one way from the Connecticut to the Massachusetts border, and caps the per-truck cost at a maximum of \$40.00 per day. RIDOT estimates that this tolling program will generate \$45.0 million in revenue and cost \$4.4 million to operate for a net increase in funding of just over \$40.0 million annually.

The size and term of the GARVEE borrowing authorized by the current proposal is half that of the \$600.0 million, 30-year toll-financed revenue bond authorized in the original legislation passed by the Senate in June of 2015. The current legislation also cuts the proposed toll rate by a third; although the 2015 bill did not specify the toll rates, RIDOT projected the one-way maximum would be set at \$30.00 and the per-day maximum capped at \$60.00.

As Table 4 illustrates, the current proposal does not meet the annual cash flow needs outlined in RIDOT’s 10-year TIP. To meet the cash flow requirements, RIDOT would need to borrow a total of \$385.0 million if the borrowing is structured as a single, one-time disbursement in FY2016 and tolling remains at \$45.0 million annually (see Table 1 in the Appendix). Alternatively, if the borrowing is structured in multiple disbursements as needed, RIDOT would need to borrow a total of \$330.0 million (see Table 2 in the Appendix). It is important to note that as it currently stands, the legislation does not permit RIDOT to borrow more than \$300.0 million.

It is also important to note that the \$300.0 million bond authorized by the current proposal is not sufficient to provide the state match for RIDOT’s future application to secure \$400.0 million in Federal Transit Authority (FTA) New Starts funding for the proposed Bus Rapid Transit portion of the Route 6/10 Interchange reconstruction project.

The current proposal generates a cumulative surplus of just over \$56.0 million in unallocated revenue at the end of the 10-year period between FY2016 and FY2025.

<b>Table 4: Current Proposal, \$300m Bond, \$45m Tolling Revenue Annually (\$ millions)</b>											
<b>RhodeWorks Annual Funding Gap</b>											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 5,090.9
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	5,482.9
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ (392.0)</b>
<b>Funding Option: \$300m Bond, \$45m Tolling Annually</b>											
<b>Additional Funding Sources</b>	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
New GARVEE	\$ 300.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 300.0
New Debt Service	(3.7)	(15.1)	(15.1)	(15.1)	(15.0)	(15.1)	(15.1)	(15.1)	(15.1)	(52.1)	(176.5)
Tolling Revenue	-	-	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	360.0
Tolling Operations	-	-	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(35.2)
Annual Funding Surplus	283.4	(62.9)	(96.9)	(91.2)	(59.8)	(39.8)	40.2	40.1	40.1	3.1	56.3
<b>Cumulative Funding Surplus</b>	<b>\$ 283.4</b>	<b>\$ 220.5</b>	<b>\$ 123.6</b>	<b>\$ 32.3</b>	<b>\$ (27.5)</b>	<b>\$ (67.3)</b>	<b>\$ (27.1)</b>	<b>\$ 13.0</b>	<b>\$ 53.1</b>	<b>\$ 56.3</b>	<b>\$ 56.3</b>
<b>15-year Debt Service @ 5% Interest (based on RIDOT projections)</b>										<b>Debt Service Remaining</b>	<b>\$ (312.90)</b>
										<b>Total Debt Service</b>	<b>\$ (489.4)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY2016 - FY2025," October 27, 2015; RIDOT, "RhodeWorks G6"; RIPEC Calculations.

**RIPEC Model 1: \$515m Bond, No Tolling**

RIPEC first considers how much borrowing it would take to meet RIDOT’s cash flow requirements without any tolling or other new or additional sources of revenue. Since the total borrowing will have to be larger without any additional revenue, RIPEC assumes a total of 20 years of debt service rather than 15. Furthermore, rather than a single, one-time disbursement, this model assumes that the proceeds will be allocated as needed in multiple, lesser cost, short-term bond-anticipation notes that will eventually be rolled into a single, long-term bond as a method for

improving efficiency and cost-effectiveness. The model assumes that the interest rate on the short-term notes will be four percent, and the interest rate on the long-term bond will be 5.0 percent.<sup>7</sup> As Table 5 illustrates, if no additional revenue is provided, RIDOT would have to borrow a total of \$515.0 million to meet the cash flow requirements established in the 10-year TIP. A borrowing of this size is still smaller than the \$600.0 million revenue bond proposed in the original (June 2015) legislation, which also called for a \$60.0 million annual tolling program. At the end of the 10-year period, this RIPEC model generates a cumulative surplus of unallocated revenue totaling slightly less than \$2.0 million.

<b>Table 5: RIPEC Model 1, \$515m Bond, No Tolling (\$ millions)</b>											
<b>RhodeWorks Annual Funding Gap</b>											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 5,090.9
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	5,482.9
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ (392.0)</b>
<b>Funding Option: \$515m Bond, No Tolling</b>											
<b>Additional Funding Sources</b>	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
New GARVEE	\$ 15.0	\$ 50.0	\$ 125.0	\$ 125.0	\$ 95.0	\$ 85.0	\$ 20.0	\$ -	\$ -	\$ -	\$ 515.0
New Debt Service	-	(0.6)	(2.6)	(7.6)	(12.6)	(16.4)	(19.8)	(20.6)	(20.6)	(20.6)	(121.4)
Tolling Revenue	-	-	-	-	-	-	-	-	-	-	-
Tolling Operations	-	-	-	-	-	-	-	-	-	-	-
Annual Funding Surplus	2.1	1.6	(0.0)	0.7	(3.0)	3.3	14.9	(6.0)	(6.0)	(6.0)	1.6
<b>Cumulative Funding Surplus</b>	<b>\$ 2.1</b>	<b>\$ 3.7</b>	<b>\$ 3.7</b>	<b>\$ 4.3</b>	<b>\$ 1.3</b>	<b>\$ 4.6</b>	<b>\$ 19.5</b>	<b>\$ 13.5</b>	<b>\$ 7.5</b>	<b>\$ 1.6</b>	<b>\$ 1.6</b>
<b>20-Year Debt Service @ 4% Interest in 2017-2025 (interest only), then 5% in 2026-2036 (interest + principal)</b>										<b>Debt Service Remaining</b>	<b>\$ (675.84)</b>
										<b>Total Debt Service</b>	<b>\$ (797.2)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIPEC Calculations.

### RIPEC Model 2: \$435m Bond, \$20m Tolling Revenue Annually

Next, RIPEC considers the implications of a tolling program that generates \$20.0 million in revenue annually. A tolling program of this size is less than half of what is currently proposed, and a third of the \$60.0 million program included in the original, June 2015 proposal. For the purposes of this cash flow analysis, RIPEC assumes that the operating costs associated with a tolling

<b>Table 6: RIPEC Model 2, \$435m Bond, \$20m Tolling Revenue Annually (\$ millions)</b>											
<b>RhodeWorks Annual Funding Gap</b>											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 5,090.9
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	5,482.9
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ (392.0)</b>
<b>Funding Option: \$435m Bond, \$20m Tolling Annually</b>											
<b>Additional Funding Sources</b>	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
New GARVEE	\$ 15.0	\$ 50.0	\$ 110.0	\$ 110.0	\$ 85.0	\$ 65.0	\$ -	\$ -	\$ -	\$ -	\$ 435.0
New Debt Service	-	(0.8)	(3.3)	(8.8)	(14.3)	(18.5)	(21.8)	(21.8)	(21.8)	(21.8)	(132.5)
Tolling Revenue	-	-	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	160.0
Tolling Operations	-	-	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(35.2)
Annual Funding Surplus	2.1	1.5	(0.1)	0.1	0.9	(3.2)	8.5	8.5	8.5	8.5	35.3
<b>Cumulative Funding Surplus</b>	<b>\$ 2.1</b>	<b>\$ 3.5</b>	<b>\$ 3.5</b>	<b>\$ 3.6</b>	<b>\$ 4.5</b>	<b>\$ 1.3</b>	<b>\$ 9.8</b>	<b>\$ 18.3</b>	<b>\$ 26.8</b>	<b>\$ 35.3</b>	<b>\$ 35.3</b>
<b>15-Year Debt Service @ 5% Interest (interest only 2017-2026)</b>										<b>Debt Service Remaining</b>	<b>\$ (518.80)</b>
										<b>Total Debt Service</b>	<b>\$ (651.3)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIPEC Calculations.

<sup>7</sup> This borrowing is structured differently than the current proposal and all other models included in this report. Rather than a 15-year term, this model assumes a total of 20 years of debt service, including several years of short-term notes, in order to make it possible to meet RIDOT's projected cash flow requirements. The borrowing structure may need to be refined due to possible GARVEE and/or other revenue-based borrowing limitations.

program of this size will still amount to \$4.4 million annually, the same as under the current proposal.

As Table 6 demonstrates, with an annual \$20.0 million tolling program, the size of the borrowing required to meet RIDOT’s anticipated cash flow requirements totals \$435.0 million, assuming it is structured with multiple disbursements occurring as needed. This model, which assumes a 15-year term at five percent interest, generates a cumulative surplus of unallocated revenue amounting to just over \$35.0 million at the end of the FY2016-FY2025 period.

**RIPEC Model 3: \$400m Bond, \$30m Tolling Revenue Annually**

Next, RIPEC considers the implications of a tolling program that generates \$30.0 million in revenue annually – two-thirds the size of the current proposal, and half of the amount called for by the June proposal. Once again, RIPEC assumes that operating costs will amount to \$4.4 million annually.

As Table 7 demonstrates, with an annual \$30.0 million tolling program, the size of the borrowing required to meet RIDOT’s anticipated cash flow needs totals \$400.0 million, once again assuming a 15-year term at five percent interest, structured in multiple disbursements as needed. This model generates a cumulative surplus of unallocated revenue amounting to just over \$42.0 million at the end of the FY2016-FY2025 period.

Table 7: RIPEC Model 3, \$400m Bond, \$30m Tolling Revenue Annually (\$ millions)											
RhodeWorks Annual Funding Gap											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 5,090.9
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	5,482.9
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ (392.0)</b>
Funding Option: \$400m Bond, \$30m Tolling Annually											
Additional Funding Sources	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
New GARVEE	\$ 15.0	\$ 50.0	\$ 100.0	\$ 100.0	\$ 70.0	\$ 65.0	\$ -	\$ -	\$ -	\$ -	\$ 400.0
New Debt Service	-	(0.8)	(3.3)	(8.3)	(13.3)	(16.8)	(20.0)	(20.0)	(20.0)	(68.4)	(170.7)
Tolling Revenue	-	-	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	240.0
Tolling Operations	-	-	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(35.2)
Annual Funding Surplus	2.1	1.5	(0.1)	0.6	(3.1)	8.5	20.3	20.2	20.2	(28.2)	42.1
<b>Cumulative Funding Surplus</b>	<b>\$ 2.1</b>	<b>\$ 3.5</b>	<b>\$ 3.5</b>	<b>\$ 4.1</b>	<b>\$ 1.0</b>	<b>\$ 9.6</b>	<b>\$ 29.8</b>	<b>\$ 50.1</b>	<b>\$ 70.3</b>	<b>\$ 42.1</b>	<b>\$ 42.1</b>
<b>15-Year Debt Service @ 5% Interest (interest only 2017-2024)</b>										<b>Debt Service Remaining</b>	<b>\$ (410.58)</b>
										<b>Total Debt Service</b>	<b>\$ (581.3)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIPEC Calculations.

**Comparison and Implications of Current Proposal and RIPEC Models: 10-Year Perspective**

Table 8: Summary, Current Bill and RIPEC Models, FY2016-FY2025 (\$ millions)				
Summary	Current Bill	RIPEC Model 1	RIPEC Model 2	RIPEC Model 3
Total Borrowing	\$ 300.0	\$ 515.0	\$ 435.0	\$ 400.0
Annual Tolling Revenue	\$ 45.0	\$ -	\$ 20.0	\$ 30.0
10-Year Unallocated Surplus	\$ 56.3	\$ 1.6	\$ 35.3	\$ 42.1
Meets Annual Cash-Flow Requirements?	No	Yes	Yes	Yes

As Table 8 illustrates, the larger the annual tolling program, the smaller the borrowing required to meet RIDOT's cash flow needs. However, this analysis also makes it clear that the RhodeWorks program's short-term spending surge requires substantial borrowing even when combined with an annual tolling program as large as \$45.0 million. As mentioned earlier, the \$45.0 million annual tolling program currently proposed would require a \$385.0 million borrowing (if bond proceeds are paid out in a one-time disbursement as the proposal is currently structured) to meet RIDOT's annual cash flow requirements, which is only \$130.0 million less than RIPEC's model with no tolling, \$50.0 million less than RIPEC's \$20.0 million tolling model, and \$15.0 million less than RIPEC's \$30.0 million tolling model (see Table 1 in the appendix).

There has been an effort over the last several years to reduce Rhode Island's reliance on borrowing to fund investment in transportation infrastructure because borrowing is inherently a short-term solution – it provides an immediate influx of cash, but debt service and interest payments ultimately reduce the resources available for investment over the long term. Instituting a tolling program, on the other hand, would represent a long-term solution to any structural budget deficit by creating a stable stream of new revenue available to RIDOT. Nonetheless, there are some compelling reasons to rely on borrowing as a mechanism to fund the RhodeWorks program.

First, the problems the RhodeWorks program is designed to address are short-term. The reconstruction of the Route 6/10 Interchange, like any major capital improvement project, can be thought of as a one-time investment. Once the project is complete, RIDOT should be able to maintain 6/10 in good condition through regular up-keep and the occasional preservation project, which should be possible within the constraints of the existing transportation infrastructure budget.

According to the logic RIDOT uses to justify the RhodeWorks bridge maintenance and capital program, addressing the overall condition of the state's bridges (beyond 6/10) is also a short-term problem. That is, according to RIDOT, restoring Rhode Island's bridges to a state of good repair only requires a short-term increase in funding for bridge capital and maintenance. That initial surge in funding will enable RIDOT to address more bridges before they fall into structural deficiency, thus avoiding more costly repairs down the line. Once that initial surge is complete, continuing to maintain and improve the state's bridges will require less investment than would be necessary in the absence of the surge, and those savings can be reallocated to pay for debt service and other transportation infrastructure improvement projects.

The second major benefit of relying on borrowing to fund RIDOT's RhodeWorks capital plan is that this option allows the state to reduce or avoid entirely the economic costs associated with tolling. The REMI study commissioned by the state to estimate the economic impact of the RhodeWorks proposal demonstrates that all of the economic benefits associated with the program (e.g. increased jobs and employment, increased disposable personal income, increased gross state product, etc.) result from increased state spending on construction. The economic impact of the tolling program by itself, however, is negative.<sup>8</sup> Thus, by relying exclusively on borrowing or

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<sup>8</sup> REMI, "The Economic Impact of RhodeWorks: An Accelerated Transportation Restoration Plan," prepared for The Rhode Island Department of Revenue, Office of Revenue Analysis, October 7, 2015.

borrowing more to reduce the size of the tolling program required to finance the 10-year TIP enables the state to capture all of the economic benefits associated with the proposal while avoiding some or all of the toll-related costs.

There are, of course, some risks associated with relying on a larger borrowing to close the funding gap. GARVEE bonds are backed by anticipated future federal transportation funding, and by borrowing against future federal dollars, the state is increasing the amount of funding available in the short term, but reducing the amount available in the outer years. This may be risky because the additional federal funds provided by the FAST Act are only guaranteed for the next five years. If federal funding returns to (or falls below) the level prior to the FAST Act authorization, RIDOT may experience substantial funding shortfalls in the future, especially in the outer years of the program when debt service payments associated with the new bond begin to increase. A tolling program can help mitigate the risks associated with borrowing by providing a new and reliable revenue stream that can help fill any funding shortfalls that may arise in the future if federal funding is reduced. In addition, the tolling program may help to mitigate against the risk of further declines in gasoline and/or diesel tax revenue in future years.

Another benefit associated with tolling is that it brings in outside revenue by tolling out-of-state trucks that simply drive through Rhode Island without stopping. The “Level 2 Traffic Collection Report” estimates that approximately 60.0 percent of truck traffic in Rhode Island that would be subject to tolls under the current proposal have out-of-state registrations. This means that up to 60.0 percent of the cost of the tolling program may be passed on to individuals and businesses outside Rhode Island with no negative impact on the local economy.<sup>9</sup> Table 9 illustrates the estimated local cost of the tolling program proposed in the current bill and the three RIPEC models, assuming 40.0 percent of total revenue is generated from local businesses.

<b>Tolling Program</b>	<b>Current Bill</b>	<b>RIPEC Model 1</b>	<b>RIPEC Model 2</b>	<b>RIPEC Model 3</b>
Annual Tolling Revenue	\$ 45.0	\$ -	\$ 20.0	\$ 30.0
Annual Local Impact (40% min.)	\$ 18.0	\$ -	\$ 8.0	\$ 12.0
Total Tolling 2018-25	\$ 360.0	\$ -	\$ 160.0	\$ 240.0
<b>Total Local Impact (40% min.)</b>	<b>\$ 144.0</b>	<b>\$ -</b>	<b>\$ 64.0</b>	<b>\$ 96.0</b>

It is important to note, however, that this estimate does not account for out-of-state trucks making deliveries in Rhode Island, which may then pass on the tolling costs to Rhode Island businesses and/or consumers. This estimate also does not account for the likelihood that some Rhode Island companies themselves utilize trucks with out-of-state registrations to deliver their products to market. Thus, the total local impact of a tolling program is likely to be greater than the 40.0 percent suggested by the Level 2 analysis. Still, some proportion of the revenue generated by any tolling program is likely to come from outsiders, thus reducing the negative impact of the program on the local economy.

<sup>9</sup> RIDOT, “Level 2 Traffic Collection Report: Truck Traffic Count Summary Report,” October 2015.

As part of a broader look at the likely economic impact of the entire RhodeWorks program, the REMI study examined the impact that the local portion of the tolling program will likely have on the state’s economy. REMI estimates that tolling will have the greatest negative impact on two relatively small sectors of the Rhode Island economy: manufacturing, which relies heavily on large commercial vehicles for delivering their inputs and bringing their products to market; and, more obviously, transportation and warehousing. It is particularly noteworthy that these sectors are most negatively impacted by tolling because the “Rhode Island Innovates” report by Battelle and Brookings identifies manufacturing and transportation and logistics as two industries that represent valuable opportunities for development and growth in Rhode Island.<sup>10</sup> Therefore, instituting what amounts to a tax on these two industrial sectors might undermine other economic development initiatives and efforts within the state.

The REMI study was commissioned to examine the economic implications of the original RhodeWorks legislation. Therefore, it assumes a \$60.0 million tolling program with a \$13.5 million dollar benefits package to off-set the cost of the tolling program to local companies. The REMI study was also conducted prior to the Level 2 traffic analysis; it was, therefore, based on earlier traffic estimates, which indicated that under 35.0 percent of truck traffic subject to the tolls are registered in Rhode Island. The REMI study assumed that the local impact of the \$60.0 million tolling program would be \$17.8 million annually: the net estimated impact on locally-registered trucks totaled \$5.0 million after accounting for the \$13.5 million benefits package, plus an estimated \$12.8 million impact on in-bound traffic (trucks with out-of-state registrations making

**Table 10: REMI Study - Impact of Tolling Program on Employment (Assumes \$17.8m Local Impact Annually)**

Employment Aggregates													
Category	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total	Average
Private Non-Farm	0	0	-139	-200	-243	-270	-286	-294	-297	-295	-289	-2314	-210
Government	0	0	-9	-13	-17	-21	-23	-25	-27	-28	-28	-192	-17
Farm	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>-148</b>	<b>-214</b>	<b>-260</b>	<b>-291</b>	<b>-309</b>	<b>-320</b>	<b>-324</b>	<b>-323</b>	<b>-318</b>	<b>-2506</b>	<b>-228</b>
23 Sector Private-Non Farm Employment													
Category	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total	Average
Forestry, Fishing, and Related Activities	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-8	-1
Mining	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-7	-1
Utilities	0	0	0	0	0	0	0	0	0	0	0	-3	0
Construction	0	0	-16	-25	-29	-31	-31	-31	-29	-27	-25	-245	-22
Manufacturing	0	0	-26	-44	-56	-65	-70	-72	-73	-73	-71	-550	-50
Wholesale Trade	0	0	-3	-3	-4	-4	-4	-4	-4	-4	-4	-34	-3
Retail Trade	0	0	-24	-27	-29	-30	-31	-31	-31	-31	-30	-265	-24
Transportation and Warehousing	0	0	-21	-35	-45	-53	-58	-61	-63	-63	-63	-461	-42
Information	0	0	-1	-2	-2	-2	-2	-2	-2	-2	-2	-20	-2
Finance and Insurance	0	0	-3	-4	-4	-5	-5	-4	-4	-4	-4	-37	-3
Real Estate and Rental and Leasing	0	0	-2	-3	-4	-5	-5	-5	-5	-5	-5	-40	-4
Professional, Scientific, and Technical Services	0	0	-5	-7	-9	-10	-11	-11	-11	-12	-12	-87	-8
Management of Companies and Enterprises	0	0	-1	-2	-2	-2	-2	-2	-2	-2	-2	-19	-2
Administrative and Waste Management Services	0	0	-6	-9	-11	-13	-14	-14	-15	-15	-15	-111	-10
Educational Services	0	0	-1	-1	-2	-2	-2	-2	-2	-2	-2	-17	-2
Health Care and Social Assistance	0	0	-10	-12	-14	-16	-17	-17	-18	-18	-18	-141	-13
Arts, Entertainment, and Recreation	0	0	-2	-3	-4	-4	-5	-5	-5	-5	-5	-38	-3
Accommodation and Food Services	0	0	-8	-11	-14	-16	-17	-18	-19	-19	-19	-140	-13
Other Services, except Public Administration	0	0	-8	-10	-11	-11	-11	-11	-11	-10	-10	-93	-8

Source: REMI, “The Economic Impact of RhodeWorks: An Accelerated Transportation Restoration Plan,” prepared for The Rhode Island Department of Revenue, Office of Revenue Analysis, October 7, 2015.

<sup>10</sup> Battelle Technology Partnership Practice in association with the Metropolitan Policy Program at Brookings with support from Monitor Deloitte and TEconomy Partners, LLC, “Rhode Island Innovates: A Competitive Strategy for the Ocean State,” January 2016.

deliveries in Rhode Island). Table 10 displays the projected impact on employment estimated by REMI's analysis.

RIPEC's analysis indicates that the impact of the currently-proposed \$45.0 million tolling program will actually be more strongly negative than the REMI study suggests, despite representing a decrease from the \$60.0 million tolling program assumed in the study. The likely local impact of the \$45.0 million program is a minimum of \$18.0 million, or 40.0 percent. However, as previously indicated, the local impact is actually likely to be higher, since the 40.0 percent does not account for inbound traffic – trucks with out-of-state registrations making deliveries in Rhode Island. The impact of the \$20.0 million and \$30.0 million tolling programs proposed in RIPEC's second and third models, on the other hand, is likely to be less strongly negative.

As this analysis demonstrates, there are a number of trade-offs involved in varying the size of the borrowing and tolling program to meet RIDOT's cash flow requirements over the 10-year period. In the following section of this report, RIPEC examines the longer-term impact of these potential options.

<b>Long-Term Projections: FY 2016-FY 2032</b>
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Although RIDOT has projected bridge maintenance and capital expenditure under the RhodeWorks program through FY 2032, the organization has only projected other transportation maintenance, operations, and capital expenditures through FY 2025. Therefore, in order to provide a longer-term perspective, RIPEC makes several assumptions regarding transportation funding and expenditure in the years following FY 2025.

For the 10-year FY 2016-FY 2025 analysis, all categories of projected expenditure are based on the RhodeWorks figures provided in RIDOT's TIP. Beginning in FY 2026, annual "Bridge Capital + Maintenance" expenditure projections are based on RIDOT's December 2015 RhodeWorks bridge program; "Existing Debt Service" is assumed to remain constant at FY 2025 levels; and all other expenditure categories are set to equal the FY 2016-FY 2025 average. Beginning in FY 2026, "Total RIDOT TIP Funding Sources" are assumed to remain constant at FY 2025 levels once the additional \$20.0 million in annual RICAP funding is removed; additional FAST Act funding is also assumed to remain constant at FY 2025 levels. Projected RIDOT funding and expenditures based on these assumptions are presented in Table 11. Although the figures beyond FY 2025 are inexact, RIPEC believes these assumptions provide a reasonable assessment of RIDOT's future funding needs and availability.

In this section of the report, RIPEC also offers a historical perspective by providing RIDOT's actual FY 2010-FY 2015 expenditure alongside future projections. This makes it possible to illustrate how future funding under each of the models considered here compares to historical expenditure.

Figure 1 illustrates actual RIDOT expenditure from FY 2010-FY 2015; anticipated RIDOT expenditure based on the RhodeWorks TIP from FY 2016-FY 2025; and anticipated RIDOT expenditure based on RIPEC's assumptions outlined above. As this figure demonstrates, RIDOT expenditure has already been steadily increasing since 2010. This figure also clearly illustrates the spending surge called for under the RhodeWorks program. As can be seen in Figure 1, RIPEC's assumptions outlined earlier result in annual expenditure projections beyond FY 2025 that are lower than previous years. This is for two main reasons. First, by this point the \$400.0 million Route 6/10 project will be complete, which represents a large, one-time investment. Second, RIDOT's own projected bridge expenditure begins to decline in the later years of the RhodeWorks program, which makes sense if one accepts the logic behind the spending surge, and if one accepts RIDOT's projection that the state's bridges will reach 90.0 percent structural sufficiency by 2025 and 97.0 percent by 2032.

It is important to remember that RIPEC's FY 2026-FY 2032 expenditure projections are based on RIDOT's bridge program and on averaging previous RhodeWorks expenditure for the other categories. RIPEC did not make any independent judgements regarding the amount RIDOT should, or would need to, spend. Furthermore, as will be demonstrated below, the current proposal and all of RIPEC's models provide additional funding above these FY 2026-FY 2032 expenditure projections, in case RIPEC's estimates prove to be insufficient.

**Table 11: RIDOT Funding and Expenditure Requirements, RIPEC's Long-Term FY2016-FY2032 Projections (\$ millions)**

RhodeWorks Annual Projected Expenditure																		
Expenditure Category	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Bridge Maintenance + Capital	\$ 150.9	\$ 168.6	\$ 193.9	\$ 154.6	\$ 125.1	\$ 119.2	\$ 104.9	\$ 107.7	\$ 83.8	\$ 102.2	\$ 63.4	\$ 87.1	\$ 112.5	\$ 89.1	\$ 136.6	\$ 63.6	\$ 58.1	\$ 1,921.4
Pavement Maintenance + Capital	64.7	74.1	60.0	71.8	72.1	57.2	74.8	80.6	94.6	131.8	78.2	78.2	78.2	78.2	78.2	78.2	78.2	1,328.9
Transit Operations + Capital (RIDOT)	10.9	12.1	12.3	14.8	15.5	15.6	20.7	21.8	22.0	22.5	16.8	16.8	16.8	16.8	16.8	16.8	16.8	286.0
Route 6/10 Reconstruction (State)	-	20.0	100.0	100.0	100.0	80.0	-	-	-	-	-	-	-	-	-	-	-	400.0
Existing Debt Service	67.4	68.2	61.8	91.6	98.5	105.7	90.6	84.0	69.7	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4	1,020.7
Other Capital, Maintenance, Operations	183.4	204.9	199.8	191.4	193.0	204.0	214.6	211.5	234.1	212.3	204.9	204.9	204.9	204.9	204.9	204.9	204.9	3,483.5
<b>Total Expenditure</b>	<b>\$ 477.4</b>	<b>\$ 547.9</b>	<b>\$ 627.8</b>	<b>\$ 624.3</b>	<b>\$ 604.1</b>	<b>\$ 581.6</b>	<b>\$ 505.7</b>	<b>\$ 505.7</b>	<b>\$ 504.2</b>	<b>\$ 504.2</b>	<b>\$ 398.7</b>	<b>\$ 422.4</b>	<b>\$ 447.8</b>	<b>\$ 424.4</b>	<b>\$ 471.9</b>	<b>\$ 398.9</b>	<b>\$ 393.4</b>	<b>\$ 8,440.4</b>

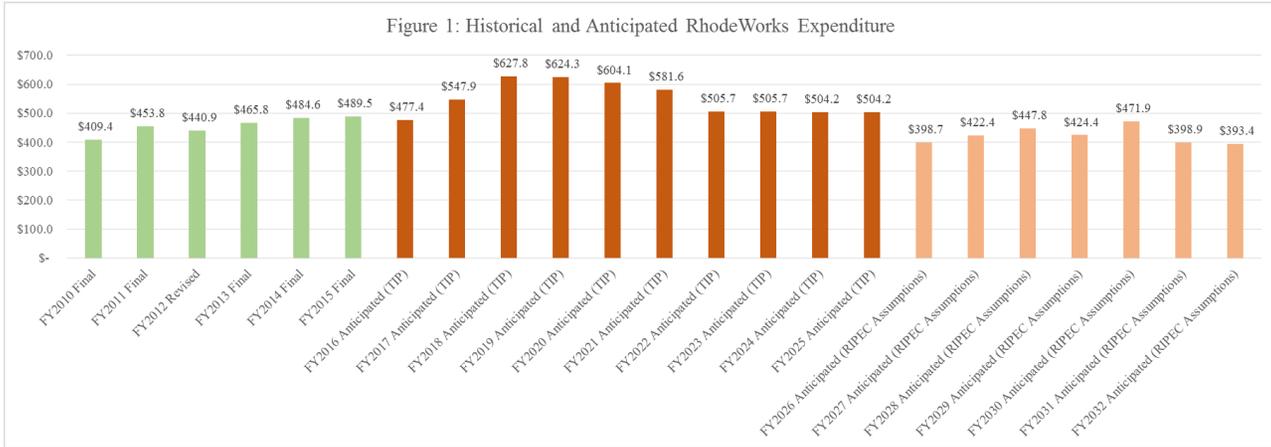
  

Projected Annual Funding for RIDOT under Current Law																		
Funding Source	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Total RIDOT TIP Funding Sources	\$ 477.5	\$ 548.0	\$ 627.8	\$ 644.3	\$ 654.1	\$ 631.7	\$ 605.7	\$ 605.7	\$ 584.2	\$ 504.2	\$ 504.2	\$ 504.2	\$ 504.2	\$ 504.2	\$ 504.2	\$ 504.2	\$ 504.2	\$ 9,412.6
Toll Bond Proceeds	(25.0)	(45.0)	(125.0)	(125.0)	(100.0)	(80.0)	-	-	-	-	-	-	-	-	-	-	-	(500.0)
FTA New Starts (6/10 Transit)	-	-	-	(20.0)	(50.0)	(50.0)	(100.0)	(100.0)	(80.0)	-	-	-	-	-	-	-	-	(400.0)
RICAP for Projects	-	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(320.0)
FAST Act Apportionments	10.7	15.3	20.2	25.4	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	31.1	475.9
FAST Act Transit	1.3	1.9	2.4	2.9	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	54.0
<b>Total Funding Sources</b>	<b>\$ 464.5</b>	<b>\$ 500.2</b>	<b>\$ 505.4</b>	<b>\$ 507.6</b>	<b>\$ 518.7</b>	<b>\$ 516.3</b>	<b>\$ 520.3</b>	<b>\$ 520.3</b>	<b>\$ 518.8</b>	<b>\$ 8,722.5</b>								

RhodeWorks Annual Funding Gap																		
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 8,722.5
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	398.7	422.4	447.8	424.4	471.9	398.9	393.4	8,440.4
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 120.1</b>	<b>\$ 96.4</b>	<b>\$ 71.0</b>	<b>\$ 94.4</b>	<b>\$ 46.9</b>	<b>\$ 119.9</b>	<b>\$ 125.4</b>	<b>\$ 282.1</b>

Note: All categories of annual expenditure based on RIDOT "TIP" through 2025. Beginning in 2026, "Bridge Maintenance + Capital" based on RIDOT's December RhodeWorks bridge program; "Existing Debt Service" held constant at 2025 levels; and all remaining expenditure categories equal to 2016-2025 average.  
 Note: Beginning in 2026, "Total Funding Sources" held constant at 2025 levels.  
 Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIDOT, "RhodeWorks Bonded with Program Extending beyond 90% Sufficiency to 2034 (Includes 6/10)," December 9, 2015; RIPEC Calculations.



■ Historical RIDOT Expenditure  
■ Anticipated RIDOT Expenditure based on RhodeWorks TIP  
■ Anticipated RIDOT Expenditure based on RhodeWorks bridge program and RIPEC assumptions

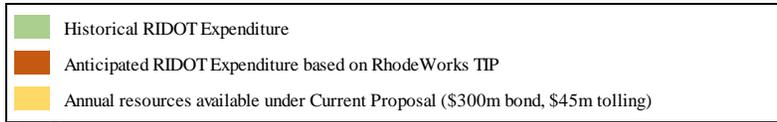
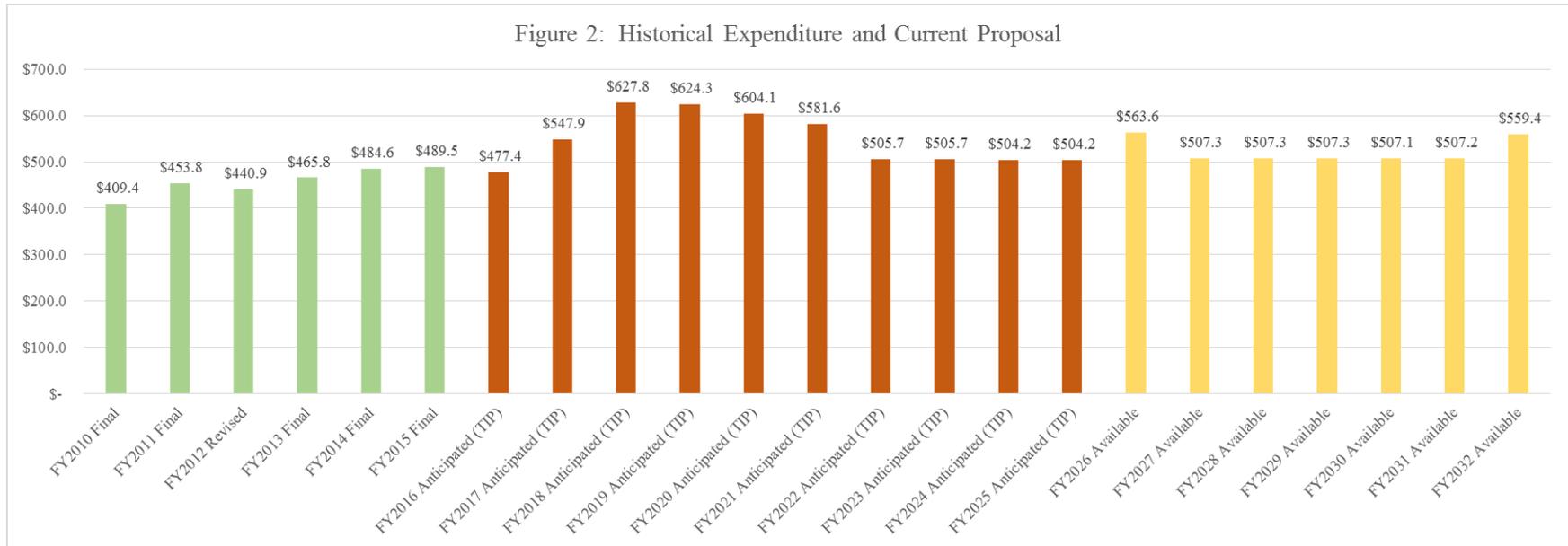
**Current RhodeWorks Funding Proposal, FY 2016-FY 2032: \$300m Bond, \$45m Tolling**

Figure 2 illustrates actual RIDOT expenditure from FY 2010-FY 2015; anticipated RIDOT expenditure based on the RhodeWorks TIP from FY 2016-FY 2025; and the annual resources RIPEC estimates will be available to RIDOT from FY 2026-FY 2032 if the current legislative proposal that calls for a \$300.0 million bond and \$45.0 million annual tolling program passes the Rhode Island House and Senate. As this figure demonstrates, the annual resources available to RIDOT under this model in FY 2026-FY 2032 exceed historical expenditure. Furthermore, the annual resources provided by this model in the outer years exceed annual TIP expenditure, excluding the years during which the Route 6/10 reconstruction occurs (FY 2017-FY 2021). Beginning in FY 2032, after debt service on the \$300.0 million bond is complete, RIDOT will have nearly \$560.0 million available annually.

The long-term FY 2016-FY 2032 cash flow analysis of this model is presented in Table 12. Based on RIPEC's projections regarding RIDOT's expenditure requirements beyond FY 2025 (detailed above), this analysis estimates that RIDOT will accumulate over \$700.0 million in unallocated resources by the end of the 17-year period.

**RIPEC Model 1, FY 2016-FY2032: \$515m Bond, No Tolling**

Figure 3 illustrates actual RIDOT expenditure from FY 2010-FY 2015; anticipated RIDOT expenditure based on the RhodeWorks TIP from FY 2016-FY 2025; and the annual resources RIPEC estimates will be available to RIDOT from FY 2026-FY 2032 under RIPEC Model 1 – that is, a \$515.0 million bond and no tolling. As this figure demonstrates, the annual resources available to RIDOT under this model in FY 2026-FY 2032 are on par with historical RIDOT expenditure. However, as Table 13 demonstrates, the annual funding provided by this model still exceeds the FY 2026-FY 2032 cash flow requirements based on RIPEC's assumptions. RIPEC's analysis estimates that RIDOT will accumulate over \$245.0 million in unallocated resources by the end of the FY 2016-FY 2032 period under this model.



**Table 12: Current Proposal, \$300m Bond, \$45m Tolling Revenue Annually, FY2016-FY2032 (\$ millions)**

RhodeWorks Annual Funding Gap																			
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 8,722.5	
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	398.7	422.4	447.8	424.4	471.9	398.9	393.4	8,440.4	
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 120.1</b>	<b>\$ 96.4</b>	<b>\$ 71.0</b>	<b>\$ 94.4</b>	<b>\$ 46.9</b>	<b>\$ 119.9</b>	<b>\$ 125.4</b>	<b>\$ 282.1</b>	
Funding Option: \$300m Bond, \$45m Tolling Annually																			
Additional Funding Sources	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
New GARVEE	\$ 300.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 300.0	
New Debt Service	(3.7)	(15.1)	(15.1)	(15.1)	(15.0)	(15.1)	(15.1)	(15.1)	(15.1)	(52.1)	(52.1)	(52.1)	(52.1)	(52.1)	(52.3)	(52.2)	-	(489.4)	
Tolling Revenue	-	-	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	675.0	
Tolling Operations	-	-	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(66.0)	
Annual Funding Surplus	283.4	(62.9)	(96.9)	(91.2)	(59.8)	(39.8)	40.2	40.1	40.1	3.1	108.6	84.9	59.5	82.9	35.2	108.3	166.0	701.7	
<b>Cumulative Funding Surplus</b>	<b>\$ 283.4</b>	<b>\$ 220.5</b>	<b>\$ 123.6</b>	<b>\$ 32.3</b>	<b>\$ (27.5)</b>	<b>\$ (67.3)</b>	<b>\$ (27.1)</b>	<b>\$ 13.0</b>	<b>\$ 53.1</b>	<b>\$ 56.3</b>	<b>\$ 164.9</b>	<b>\$ 249.8</b>	<b>\$ 309.3</b>	<b>\$ 392.2</b>	<b>\$ 427.4</b>	<b>\$ 535.7</b>	<b>\$ 701.7</b>	<b>\$ 701.7</b>	
15-Year Debt service @ 5% (based on RIDOT projections)																		<b>Debt Service Remaining</b>	<b>\$ -</b>
																		<b>Total Debt Service</b>	<b>\$ (489.4)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIDOT, "RhodeWorks Bonded with Program Extending beyond 90% Sufficiency to 2034 (Includes 6/10)," December 9, 2015; RIPEC Calculations.

Figure 3: Historical Expenditure and RIPEC Model 1

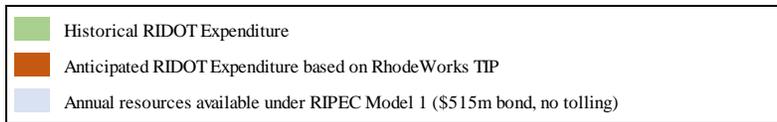
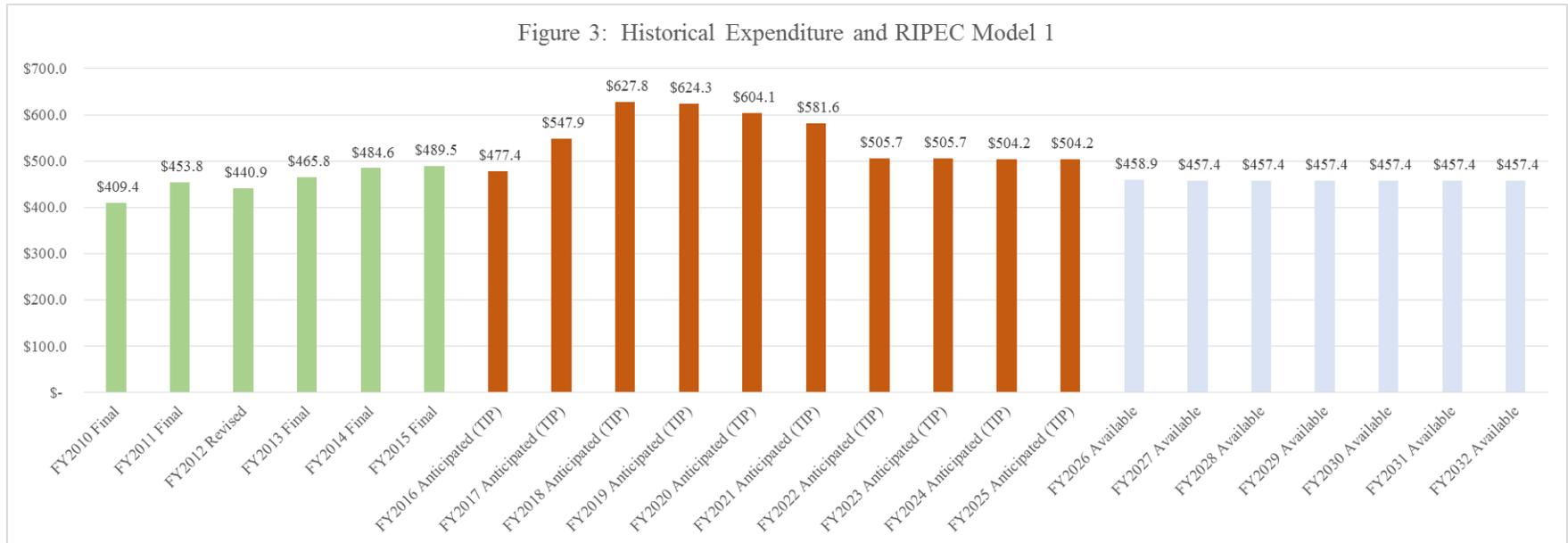


Table 13: RIPEC Model 1, \$515m Bond, No Tolling, FY2016-FY2032 (\$ millions)

RhodeWorks Annual Funding Gap																		
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 8,722.5
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	398.7	422.4	447.8	424.4	471.9	398.9	393.4	8,440.4
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 120.1</b>	<b>\$ 96.4</b>	<b>\$ 71.0</b>	<b>\$ 94.4</b>	<b>\$ 46.9</b>	<b>\$ 119.9</b>	<b>\$ 125.4</b>	<b>\$ 282.1</b>
Funding Option: \$515m Bond, No Tolling																		
Additional Funding Sources	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
New GARVEE	\$ 15.0	\$ 50.0	\$ 125.0	\$ 125.0	\$ 95.0	\$ 85.0	\$ 20.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 515.0
New Debt Service	-	(0.6)	(2.6)	(7.6)	(12.6)	(16.4)	(19.8)	(20.6)	(20.6)	(20.6)	(61.4)	(61.4)	(61.4)	(61.4)	(61.4)	(61.4)	(61.4)	(551.5)
Tolling Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tolling Operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual Funding Surplus	2.1	1.6	(0.0)	0.7	(3.0)	3.3	14.9	(6.0)	(6.0)	(6.0)	58.7	35.0	9.6	33.0	(14.5)	58.5	64.0	245.6
<b>Cumulative Funding Surplus</b>	<b>\$ 2.1</b>	<b>\$ 3.7</b>	<b>\$ 3.7</b>	<b>\$ 4.3</b>	<b>\$ 1.3</b>	<b>\$ 4.6</b>	<b>\$ 19.5</b>	<b>\$ 13.5</b>	<b>\$ 7.5</b>	<b>\$ 1.6</b>	<b>\$ 60.2</b>	<b>\$ 95.2</b>	<b>\$ 104.8</b>	<b>\$ 137.7</b>	<b>\$ 123.2</b>	<b>\$ 181.7</b>	<b>\$ 245.6</b>	<b>\$ 245.6</b>
<b>20-Year Debt Service @ 4% Interest in 2017-2025 (interest only), then 5% in 2026-2036 (interest + principal)</b>																	<b>Debt Service Remaining</b>	<b>\$ (245.76)</b>
																	<b>Total Debt Service</b>	<b>\$ (797.2)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIDOT, "RhodeWorks Bonded with Program Extending beyond 90% Sufficiency to 2034 (Includes 6/10)," December 9, 2015; RIPEC Calculations.

**RIPEC Model 2, FY 2016-FY 2032: \$435m Bond, \$20m Tolling**

Figure 4 illustrates actual RIDOT expenditure from FY 2010-FY 2015; anticipated RIDOT expenditure based on the RhodeWorks TIP from FY 2016-FY 2025; and the annual resources RIPEC estimates will be available to RIDOT from FY 2026-FY 2032 under RIPEC Model 2 – that is, a \$435.0 million bond and a \$20.0 million annual tolling program. As this figure demonstrates, the annual resources available to RIDOT under this model in FY 2027-FY 2031 are on par with, or slightly below, historical RIDOT expenditure. However, some of the nearly \$550.0 million available in FY 2026 can be distributed more evenly over the FY 2026-FY 2031 period to increase annual expenditure if necessary. Furthermore, beginning in FY 2032, when the debt service associated with the \$435.0 million bond is paid off, RIDOT can expect to have over \$534.0 million in funding annually.

The long-term FY 2016-FY 2032 cash flow analysis of this model is presented in Table 14. Based on RIPEC’s projections regarding RIDOT’s expenditure requirements beyond FY 2025 (detailed above), this analysis estimates that RIDOT will accumulate nearly \$300.0 million in unallocated surplus funding by the end of the 17-year period.

**RIPEC Model 3, FY 2016-FY 2032: \$400m Bond, \$30m Tolling**

Figure 5 illustrates actual RIDOT expenditure from FY 2010-FY 2015; anticipated RIDOT expenditure based on the RhodeWorks TIP from FY 2016-FY2025; and the annual resources RIPEC estimates will be available to RIDOT from FY 2026-FY 2032 under RIPEC Model 2 – that is, a \$400.0 million bond and a \$30.0 million annual tolling program. As this figure demonstrates, the annual resources available to RIDOT under this model in FY 2026-FY 2031 are more or less on par with anticipated RhodeWorks TIP expenditure before and after the Route 6/10 project is complete (FY 2022-FY 2025). Beginning in FY 2032 RIDOT can expect to have even more funding available – in excess of \$544.0 million annually – when the debt service associated with the \$400.0 million bond is paid off.

The long-term FY 2016-FY 2032 cash flow analysis of this model is presented in Table 15. Based on RIPEC’s projections regarding RIDOT’s expenditure requirements beyond FY 2025 (detailed above), this analysis estimates that RIDOT will accumulate nearly \$485.0 million in unallocated surplus funding by the end of the 17-year period.

Figure 4: Historical Expenditure and RIPEC Model 2

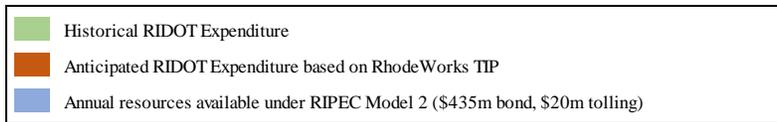
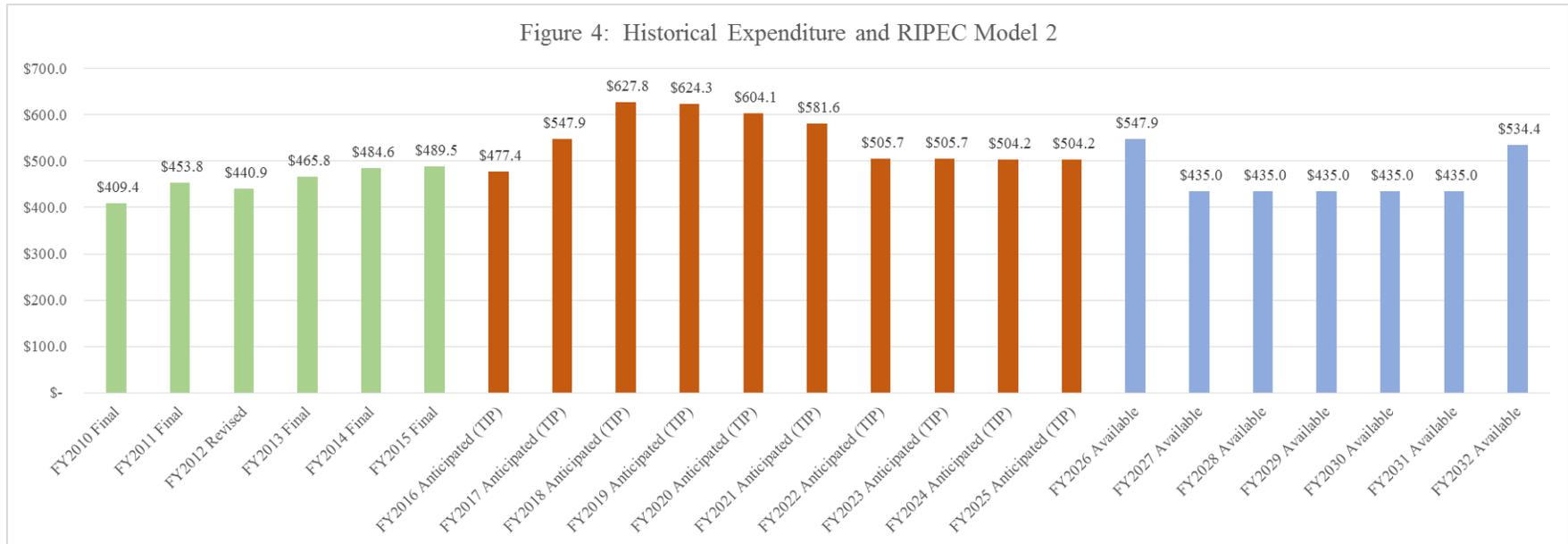
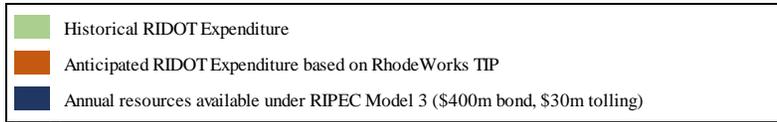
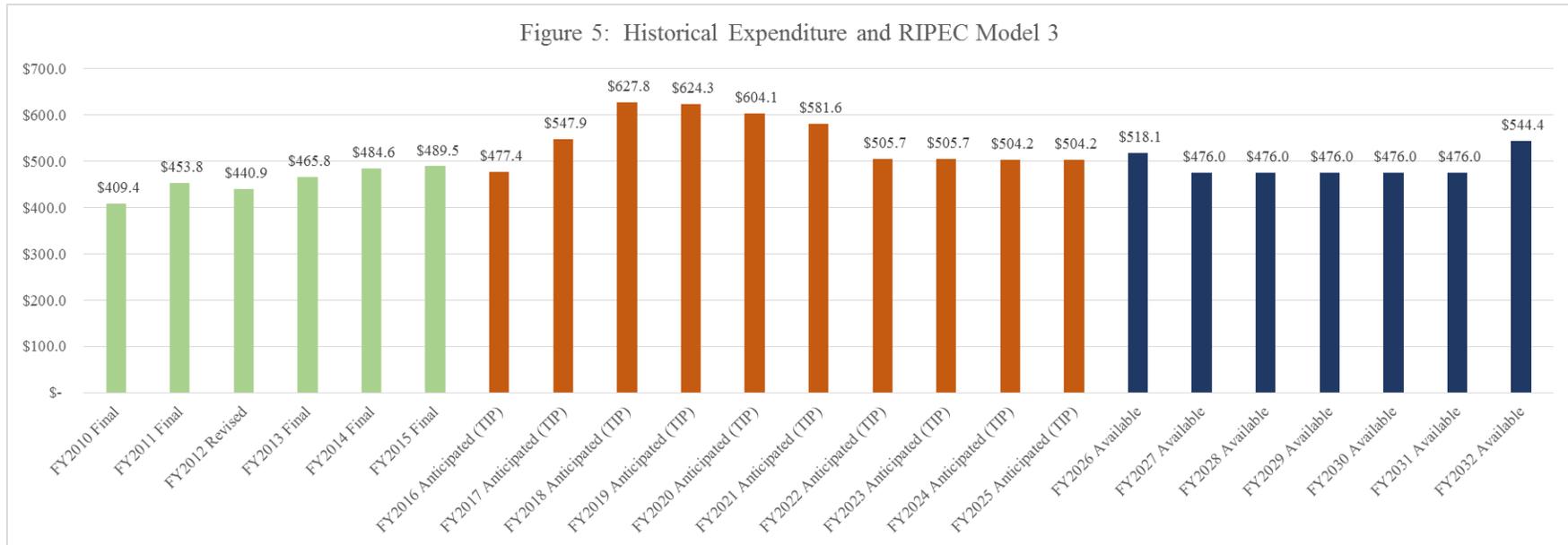


Table 14: RIPEC Model 2, \$435m Bond, \$20m Tolling Revenue Annually, FY2016-FY2032 (\$ millions)

RhodeWorks Annual Funding Gap																		
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 8,722.5
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	398.7	422.4	447.8	424.4	471.9	398.9	393.4	8,440.4
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 120.1</b>	<b>\$ 96.4</b>	<b>\$ 71.0</b>	<b>\$ 94.4</b>	<b>\$ 46.9</b>	<b>\$ 119.9</b>	<b>\$ 125.4</b>	<b>\$ 282.1</b>
Funding Option: \$435m Bond, \$20m Tolling Annually																		
Additional Funding Sources	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
New GARVEE	\$ 15.0	\$ 50.0	\$ 110.0	\$ 110.0	\$ 85.0	\$ 65.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 435.0
New Debt Service	-	(0.8)	(3.3)	(8.8)	(14.3)	(18.5)	(21.8)	(21.8)	(21.8)	(21.8)	(21.8)	(99.4)	(99.4)	(99.4)	(99.4)	(99.4)	-	(651.3)
Tolling Revenue	-	-	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	300.0
Tolling Operations	-	-	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(66.0)
Annual Funding Surplus	2.1	1.5	(0.1)	0.1	0.9	(3.2)	8.5	8.5	8.5	8.5	113.9	12.6	(12.8)	10.6	(36.9)	36.1	141.0	299.8
<b>Cumulative Funding Surplus</b>	<b>\$ 2.1</b>	<b>\$ 3.5</b>	<b>\$ 3.5</b>	<b>\$ 3.6</b>	<b>\$ 4.5</b>	<b>\$ 1.3</b>	<b>\$ 9.8</b>	<b>\$ 18.3</b>	<b>\$ 26.8</b>	<b>\$ 35.3</b>	<b>\$ 149.2</b>	<b>\$ 161.8</b>	<b>\$ 149.0</b>	<b>\$ 159.6</b>	<b>\$ 122.7</b>	<b>\$ 158.8</b>	<b>\$ 299.8</b>	<b>\$ 299.8</b>
<b>15-Year Debt Service @ 5% Interest (interest only 2017-2026)</b>																	<b>Debt Service Remaining</b>	<b>\$ -</b>
																	<b>Total Debt Service</b>	<b>\$ (651.3)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIDOT, "RhodeWorks Bonded with Program Extending beyond 90% Sufficiency to 2034 (Includes 6/10)," December 9, 2015; RIPEC Calculations.

Figure 5: Historical Expenditure and RIPEC Model 3



**Table 15: RIPEC Model 3, \$400m Bond, \$30m Tolling Revenue Annually, FY2016-FY2032 (\$ millions)**

RhodeWorks Annual Funding Gap																			
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 518.8	\$ 8,722.5	
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	398.7	422.4	447.8	424.4	471.9	398.9	393.4	8,440.4	
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 120.1</b>	<b>\$ 96.4</b>	<b>\$ 71.0</b>	<b>\$ 94.4</b>	<b>\$ 46.9</b>	<b>\$ 119.9</b>	<b>\$ 125.4</b>	<b>\$ 282.1</b>	
Funding Option: \$400m Bond, \$30m Tolling Annually																			
Additional Funding Sources	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total	
New GARVEE	\$ 15.0	\$ 50.0	\$ 100.0	\$ 100.0	\$ 70.0	\$ 65.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 400.0	
New Debt Service	-	(0.8)	(3.3)	(8.3)	(13.3)	(16.8)	(20.0)	(20.0)	(20.0)	(68.4)	(68.4)	(68.4)	(68.4)	(68.4)	(68.4)	(68.4)	-	(581.3)	
Tolling Revenue	-	-	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	450.0	
Tolling Operations	-	-	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(66.0)	
Annual Funding Surplus	2.1	1.5	(0.1)	0.6	(3.1)	8.5	20.3	20.2	20.2	(28.2)	77.3	53.6	28.2	51.6	4.1	77.1	151.0	484.9	
<b>Cumulative Funding Surplus</b>	<b>\$ 2.1</b>	<b>\$ 3.5</b>	<b>\$ 3.5</b>	<b>\$ 4.1</b>	<b>\$ 1.0</b>	<b>\$ 9.6</b>	<b>\$ 29.8</b>	<b>\$ 50.1</b>	<b>\$ 70.3</b>	<b>\$ 42.1</b>	<b>\$ 119.4</b>	<b>\$ 172.9</b>	<b>\$ 201.1</b>	<b>\$ 252.7</b>	<b>\$ 256.7</b>	<b>\$ 333.8</b>	<b>\$ 484.9</b>	<b>\$ 484.9</b>	
<b>15-Year Debt Service @ 5% Interest (interest only 2017-2024)</b>																		<b>Debt Service Remaining</b>	<b>\$ -</b>
																		<b>Total Debt Service</b>	<b>\$ (581.3)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIDOT, "RhodeWorks Bonded with Program Extending beyond 90% Sufficiency to 2034 (Includes 6/10)," December 9, 2015; RIPEC Calculations.

**Long-Term Projections (FY 2016-FY 2032): Summary**

Table 16 captures the total cost of the current proposal and each of the three RIPEC models. To calculate total cost, RIPEC uses total interest paid over the life of the bond associated with each of the models and adds it to the local portion of the tolling revenue (40.0 percent of total tolling revenue) collected over the FY 2016-FY 2036 period. The reason this analysis extends through FY2036 is because RIPEC assumes 20 years of debt service for the \$515.0 million borrowing included in the bond-only model (RIPEC Model 1).

<b>Total Cost (Local Tolling Impact plus Total Interest)</b>	<b>Current Proposal \$300m Bond \$45m Tolling</b>	<b>RIPEC Model 1 \$515m Bond No Tolling</b>	<b>RIPEC Model 2 \$435m Bond \$20m Tolling</b>	<b>RIPEC Model 3 \$400m Bond \$30m Tolling</b>
Tolling Revenue 2018-36	\$ 855.0	\$ -	\$ 380.0	\$ 570.0
Local (40% min.)	342.0	-	152.0	228.0
Total Interest	189.4	282.2	216.3	181.3
<b>Total Local Cost, 2016-36</b>	<b>\$ 531.4</b>	<b>\$ 282.2</b>	<b>\$ 368.3</b>	<b>\$ 409.3</b>

As Table 16 demonstrates, the current proposal is by far the most expensive. Despite that fact, this proposal as it currently stands does not provide enough funding to meet RIDOT’s cash flow requirements during the first 10 years of the RhodeWorks program. This table also demonstrates that the higher the tolling and the lower the borrowing, the higher the total cost of the model – in spite of the higher interest associated with a larger borrowing.

<b>Total Unallocated Funds</b>	<b>Current Proposal \$300m Bond \$45m Tolling</b>	<b>RIPEC Model 1 \$515m Bond No Tolling</b>	<b>RIPEC Model 2 \$435m Bond \$20m Tolling</b>	<b>RIPEC Model 3 \$400m Bond \$30m Tolling</b>
<b>Total Accumulation, 2016-32</b>	<b>\$ 701.7</b>	<b>\$ 245.6</b>	<b>\$ 299.8</b>	<b>\$ 484.9</b>

Of course, as Table 17 illustrates, the larger the tolling program, the larger the accumulated surplus of unallocated funds at the end of the FY 2016-FY 2032 period. It is important to note, however, that this surplus does not really begin to accumulate until after the 10-year period between FY 2016 and FY 2025 (refer back to Table 8, which provides a 10-year summary of the four models under consideration).

<b>Revenue Analysis</b>
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**Tax Principles**

A revenue system includes the entire means by which governments acquire financial resources to pay for public goods and services. Although each state makes individual decisions related to its specific revenue system, different research organizations have attempted to develop a series of

principles characterizing a high-quality revenue system. Historically, RIPEC has opted to evaluate Rhode Island's overall revenue system according to a series of nine principles identified by the National Conference of State Legislatures (NCSL). Based on these principles, RIPEC believes that a high-quality revenue system should:

1. Comprise elements that are complementary, including the finances of both state and local governments;
2. Produce revenue in a reliable manner;
3. Rely on a balanced variety of revenue sources;
4. Treat individuals equitably and minimize regressivity;
5. Facilitate taxpayer compliance;
6. Promote fair, efficient and effective administration;
7. Respond to interstate and international economic competition;
8. Minimize its involvement in spending decisions and make any such involvement explicit; and
9. Be accountable to taxpayers.

In addition to the principles developed by NCSL and used by RIPEC, other organizations have developed their own sets of principles intended to guide tax policy decisions. One such organization is the Tax Foundation, a non-partisan research think tank based in Washington, D.C. The Tax Foundation has developed a set of six principles that it believes should guide policymakers as they develop tax policy:

1. Simplicity: Administrative costs are a loss to society, and complicated taxation undermines voluntary compliance by creating incentives to shelter and disguise income;
2. Transparency: Tax legislation should be based on sound legislative procedures and careful analysis;
3. Neutrality: Taxes should not encourage or discourage certain economic decisions;
4. Stability: Lawmakers should avoid enacting temporary tax laws, including tax holidays and amnesties;
5. No Retroactivity: Taxpayers should be able to rely with confidence on the law as it exists when contracts are signed and transactions are completed; and
6. Broad Bases and Low Rates: Lawmakers should avoid enacting targeted deductions, credits and exclusions.

### **Tolls as a Revenue Source**

Before assessing how well the tolling program included in the RhodeWorks proposal meets the principles outlined above, it is first necessary to establish the specific parameters of the program. According to legislation introduced in the General Assembly (H.7409/S.2246), the tolling program would consist of several elements:

- The Rhode Island Turnpike and Bridge Authority (RITBA) would be authorized to operate tolling facilities on behalf of the Rhode Island Department of Transportation (RIDOT);
- Tolls would only be collected on “large commercial trucks,” defined in the legislation as any vehicle classified by the Federal Highway Administration (FHWA) as being in Classes 8 through 13;
- The collection of tolls on any other class of motor vehicles is expressly prohibited;
- Toll collections are to be deposited in a new Rhode Island Bridge Replacement, Reconstruction and Maintenance Fund;
- The director of RIDOT is authorized to designate any Rhode Island bridge on the National Highway System as a toll bridge;
- Toll amounts are to be determined based on the costs of replacement, reconstruction, maintenance and operation of the state’s network of bridges; and
- The maximum toll that any one vehicle may be assessed in a single day is set at \$40.00, and the maximum toll for a one-way trip through the state on Route 95 from Connecticut to Massachusetts, or vice versa, is \$20.00.

Because the NCSL principles used by RIPEC are more easily applied to an overall revenue system than to a specific revenue source, this report will instead assess how well the proposed tolling program adheres to the principles developed by the Tax Foundation.

### *Tax Foundation Principles*

#### Simplicity

- Tolls are collected electronically through the use of the E-Z Pass device;
- Toll amounts and locations are determined by RIDOT;
- Maximum daily toll is clearly specified in the proposed legislation; and
- Vehicles subject to tolling are clearly specified in the legislation.

In terms of simplicity, the proposal adheres to the principle fairly closely because toll collections will be completed entirely through electronic means and the maximum daily toll and vehicles subject to tolling are clearly identified in the proposed legislation. These factors mean that vehicle operators subject to tolling should not face a large administrative burden to comply. The major aspect of the proposal that does not adhere to the simplicity principle is that the toll amounts and locations of toll facilities are to be determined by RIDOT. The simplicity of the tolling program is reduced by the possibility that the toll amount could vary at each of the 14 tolling locations.

#### Transparency

- Multiple legislative hearings were held prior to adopting the program;
- An economic impact study was completed;
- Toll amounts and location of toll facilities are currently unknown; and
- Public comment and cost/benefit analysis are required before toll amounts are adopted.

The proposal adheres to the transparency principle in some respects, while failing to adhere to it in other respects. In terms of legislative process, there have been multiple hearings held before committees of the General Assembly to solicit feedback from the public. Similarly, an economic impact study was commissioned by the state Office of Revenue Analysis to better understand the potential impacts of the proposal. Each of these actions is consistent with the transparency principle. However, the toll amounts, aside from the maximum daily toll and toll amount for a one-way trip on Route 95, as well as the location of toll facilities, are currently unknown and this reduces the proposal's adherence to the transparency principle. Preliminary tolling locations and amounts have been released, but are subject to formal adoption by RIDOT. A final positive factor is that RIDOT must provide the opportunity for public comment and conduct a cost/benefit analysis prior to adopting the final toll amounts and locations.

#### Neutrality

- May result in diversion of vehicles subject to tolls from highways with toll facilities; and
- Only collecting tolls on larger trucks may have a disparate impact on industries that rely upon these trucks to ship products or receive deliveries.

Although the proposal adheres to the neutrality principle because it does not explicitly encourage or discourage certain economic decisions, it may impact these decisions inadvertently. Raising the cost of using certain roads will result in the diversion of some vehicles subject to tolling to other roads that do not have toll facilities. In some instances, this could involve trucks bypassing Rhode Island entirely by taking alternate routes that do not travel through the state. In addition, only requiring certain classes of trucks to pay tolls may have a disparate impact on industries within the state that rely upon these trucks to ship products or receive deliveries. For example, the manufacturing industry, which relies heavily on trucks to deliver raw materials and to ship final products, may be impacted more by the tolling program than another industry that does not rely upon these trucks.

#### Stability

- Tolling program is anticipated to be in place for the foreseeable future; and
- Specific toll amounts may be modified by RIDOT.

The proposal largely adheres to the stability principle because it is expected to be in effect for the foreseeable future. Vehicle operators subject to tolls under the proposal can anticipate that they will continue to be subject to tolls in the future. One aspect of the proposal that does not adhere to the stability principle is that RIDOT may modify the toll amounts at any time. Therefore, a vehicle operator may be aware that they are subject to tolls, but cannot say with complete certainty what the amount of the toll will be in the future.

#### No Retroactivity

- Vehicle operators subject to tolls will have advance notice of tolling locations and amounts.

The proposal closely adheres to the no retroactivity principle. Vehicle operators that will be subject to tolls do not have to fear that they will owe additional money for past trips on Rhode Island's roads prior to the adoption and implementation of the tolling program. Instead, these operators know that they will be subject to an additional fee for trips that occur after the program goes into effect.

#### Broad Bases and Low Rates

- Tolls apply only to specific classes of vehicles (FHWA Classes 8 through 13);
- Because of the smaller base of vehicles, toll amounts must be set higher than with a broader base of vehicles; and
- Burden of tolls will be placed primarily upon the group of industries that relies upon large trucks to ship products or receive deliveries.

The proposal's most significant deviation from the Tax Foundation's tax principles relates to the principle of broad bases and low rates. The proposal requires that only a small base of vehicles, those in FHWA Classes 8 through 13, pay tolls when traveling on the state's roads. As a result of this narrow base, the toll amount that must be charged is much higher to generate a specified amount of revenue than if a broader base was used. In doing so, the burden on industries that rely heavily on trucks for deliveries is much greater than if all vehicles in the state were subject to tolling.

#### **Other Revenue Sources**

In addition to collecting tolls on motor vehicles, there are a variety of other funding sources that have been used to finance transportation improvements in Rhode Island and nationally. In recent years, Rhode Island policymakers have sought to augment existing transportation funding by increasing gasoline and diesel taxes, increasing license and registration fees and committing additional funding from the Rhode Island Capital Plan Fund. Other states throughout the nation have increased transportation funding through similar means, while some have explored the use of entirely new revenue sources, such as a Vehicle Miles Traveled (VMT) fee. In general, a common feature of many of the revenue sources that states have opted to utilize to finance transportation improvements is that they constitute a user fee, whereby individuals pay for the cost of infrastructure roughly in proportion to their usage of the transportation network. As with any proposed revenue source, RIPEC believes that each should be evaluated according to the principles discussed above.

<b>Conclusion</b>
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#### **Outline of Key Findings**

- The larger the annual tolling program, the smaller the borrowing required to meet RIDOT's annual cash flow needs. However, even with a relatively large tolling program, the short-term spending surge called for in the RhodeWorks program requires substantial borrowing to meet RIDOT's annual cash flow needs.

- The proposal currently under consideration in the Rhode Island General Assembly, which calls for a \$300.0 million GARVEE borrowing and a \$45.0 million annual tolling program, does not provide enough additional revenue to meet RIDOT's cash flow requirements as established in the FY 2016-FY 2025 TIP.
- The larger the annual tolling program, the larger the total cost of the model.
- The larger the annual tolling program, the larger the unallocated accumulated surplus. However, this surplus does not begin to accumulate substantially until after the 10-year period between FY 2016 and FY 2025.
- The smaller the tolling program, the smaller the negative impact on the local economy, especially the manufacturing and transportation and warehousing industries.
  - The negative impact of the current proposal is likely to be even larger than the REMI study initially indicated.
  - The negative impact of the two RIPEC models that include tolling is likely to be smaller than the REMI study initially indicated.
- A tolling program of this nature, regardless of the size, deviates from the Tax Foundation's principle that lawmakers should design tax policies with broad bases and low rates. The type of tolling program under consideration requires that only a small base of vehicles, those in FHWA Classes 8 through 13, pay tolls when traveling on the state's roads. As a result of this narrow base, the toll amount that must be charged is much higher to generate a specified amount of revenue than if a broader base was used. In doing so, the burden on industries that rely heavily on trucks for deliveries is much greater than if all vehicles in the state were subject to tolling.

### **Acknowledgement of Data Sources**

It is also important to acknowledge that, for the purposes of this report, RIPEC utilizes RIDOT data, reports and analyses without independent verification. For example, RIPEC utilizes the following figures provided by RIDOT:

- Anticipated transportation funding under current law for the FY 2016-FY 2025 period as indicated in the RhodeWorks TIP (with a few changes, as explained in this report);
- Anticipated state transportation expenditure in all categories for the FY 2016-FY 2025 period as indicated in the RhodeWorks TIP; and
- Anticipated bridge capital and maintenance expenditure for the FY 2026-FY 2032 period as indicated in the December 2015 RhodeWorks program.

For the purposes of this report, RIPEC also does not independently verify the deterioration model employed by RIDOT to estimate future bridge condition and the resulting cost projections.

RIPEC does not make any judgements in this report regarding RIDOT's selection of projects to be completed, the order and scheduling of those projects, or the estimated cost of completion. For example, in a separate analysis, RIPEC found that when the Route 6/10 project is scheduled to begin has significant budgetary implications – the later the 6/10 project is scheduled, the smaller

the amount of additional funding that is required. Beginning the project later allows RIDOT to take advantage of outer-year surpluses, thus reducing the state's funding shortfall.

RIPEC also has some concerns regarding the \$400.0 million estimated cost of the 6/10 project that is included in the RhodeWorks program. According to RIDOT, there is no current or adopted concept, plan, or design for the project, and federal environmental regulations require RIDOT to consider multiple alternatives (i.e. reconstruction as is versus an at-grade boulevard). Until that process is complete, it is difficult to consider any estimated cost to be reliable.

There are also at least two opportunities for RIDOT to secure additional federal funding for the 6/10 project. First, as indicated in the June 2015 RhodeWorks proposal, RIDOT may apply for New Starts funding from Federal Transit to support a proposed Bus Rapid Transit project along the 6/10 Interchange. Second, the FAST Act includes a provision for federal funding of large transportation projects that, according to Rhode Island Senator Whitehouse, was created with the 6/10 project in mind. Whether RIDOT is successful in securing these or other opportunities for additional 6/10 funding could have a substantial impact on the total state resources required.

Despite these concerns, this analysis takes RIDOT's estimated cost and projected schedule for the 6/10 project as given.

Finally, this analysis does not consider the implications of the preliminary number of gantries and locations released by RIDOT in early January 2016. RIDOT has not provided the sensitivity analysis they used to estimate diversion and annual tolling revenue collections at varying toll rates. Therefore, for the purposes of this analysis, RIPEC uses RIDOT's estimate that a tolling program of the proposed size will generate \$45.0 million in tolling revenue annually. Additionally, RIPEC utilized the estimated cost for operating and maintaining the gantries as provided by RIDOT.

## **Considerations Moving Forward**

### Terms and Conditions

RIPEC recommends that the authorizing legislation include a set of terms, conditions, limitations, and requirements. For example, RIPEC recommends that the legislation authorize RIDOT to borrow up to an established maximum. The borrowing should be authorized to occur at the time the funds are needed based on cash flow requirements. If actual cash flow requirements are less than the maximum amount of the authorized borrowing (either because actual costs are lower than anticipated or because RIDOT is awarded additional federal funding for 6/10 or other projects):

- RIDOT can either be authorized to reallocate excess funds to additional transportation purposes; OR
- RIDOT can be required to borrow only the amount necessary for specified transportation purposes unless additional authorization is provided by the General Assembly to borrow the maximum and reallocate the excess.

RIPEC also recommends that the legislation require RIDOT to submit a spending plan to the General Assembly to hold the organization accountable. The plan should be used to establish annual, project, and total spending caps. If overage is necessary, it can be submitted to some oversight process for approval. The legislation may also stipulate that the Governor or RIDOT retains discretion within some established percent of annual, project, and total spending caps.

If tolling is authorized, RIPEC recommends that the number, location, and maximum rate be established by legislation. Any increases or changes should be subject to approval by the General Assembly.

Finally, RIPEC recommends that the state create an economic development plan surrounding the RhodeWorks program, including a provision to develop the workforce necessary to complete the work.

#### Choices for Funding Transportation Infrastructure

RIPEC recommends that the General Assembly and the public carefully consider all the choices available for funding improvements to the state's transportation infrastructure. RIPEC believes that, broadly speaking, the available choices are as follows:

- Utilize existing revenue with a borrowing to fulfill the upfront spending surge on bridges and the Route 6/10 project. Take the savings achieved by this short-term surge in bridge expenditure to pay any associated debt service and to fund any infrastructure needs beyond bridges. RIPEC offers a model in this report to demonstrate that this is possible.
- Provide additional funding to reduce the required borrowing in the short term and/or to enhance spending in the long term by increasing existing taxes and/or fees (e.g. gas and diesel tax, licensing and registration fees, etc.), or by authorizing a new source (e.g. tolling).
  - RIPEC's models demonstrate that even with a substantial new revenue source, significant borrowing is still required. Creating a large new revenue stream leads to a substantial accumulation of unallocated funds in the outer years.
- Reduce current spending on infrastructure or reallocate revenue within the existing state budget to transportation infrastructure.
  - Existing state budget resources can also be used to reduce or replace tolling revenue and/or the size of the borrowing required.

RIPEC strongly encourages the General Assembly to carefully weigh all the options available for funding Rhode Island transportation infrastructure – and the costs, benefits, risks, and implications associated with each option – before making a final decision regarding the proposal currently under consideration.

Regardless of which option or combination of options is ultimately chosen, the state must create and fund a long-term, sustainable transportation improvement and maintenance plan.

**Appendix**

<b>Appendix Table 1: \$385m Bond, \$45m Tolling Revenue Annually (\$ millions)</b>											
<b>RhodeWorks Annual Expenditure</b>											
<b>Expenditure Category</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Total</b>
Bridge Maintenance + Capital	\$ 150.9	\$ 168.6	\$ 193.9	\$ 154.6	\$ 125.1	\$ 119.2	\$ 104.9	\$ 107.7	\$ 83.8	\$ 102.2	\$ 1,311.0
Pavement Maintenance + Capital	64.7	74.1	60.0	71.8	72.1	57.2	74.8	80.6	94.6	131.8	781.7
Transit Operations + Capital (RIDOT)	10.9	12.1	12.3	14.8	15.5	15.6	20.7	21.8	22.0	22.5	168.2
Route 6/10 Reconstruction (State)	-	20.0	100.0	100.0	100.0	80.0	-	-	-	-	400.0
Existing Debt Service	67.4	68.2	61.8	91.6	98.5	105.7	90.6	84.0	69.7	35.4	772.9
Other Capital, Maintenance, Operations	183.4	204.9	199.8	191.4	193.0	204.0	214.6	211.5	234.1	212.3	2,049.1
<b>Total Expenditure</b>	<b>\$ 477.4</b>	<b>\$ 547.9</b>	<b>\$ 627.8</b>	<b>\$ 624.3</b>	<b>\$ 604.1</b>	<b>\$ 581.6</b>	<b>\$ 505.7</b>	<b>\$ 505.7</b>	<b>\$ 504.2</b>	<b>\$ 504.2</b>	<b>\$ 5,482.9</b>
<b>Projected Annual Funding for RIDOT under Current Law</b>											
<b>Funding Source</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Total</b>
Total RIDOT TIP Funding Sources	\$ 477.5	\$ 548.0	\$ 627.8	\$ 644.3	\$ 654.1	\$ 631.7	\$ 605.7	\$ 605.7	\$ 584.2	\$ 504.2	\$ 5,883.2
Toll Bond Proceeds	(25.0)	(45.0)	(125.0)	(125.0)	(100.0)	(80.0)	-	-	-	-	(500.0)
FTA New Starts (6/10 Transit)	-	-	-	(20.0)	(50.0)	(50.0)	(100.0)	(100.0)	(80.0)	-	(400.0)
RICAP for Projects	-	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(180.0)
FAST Act Apportionments	10.7	15.3	20.2	25.4	31.1	31.1	31.1	31.1	31.1	31.1	258.2
FAST Act Transit	1.3	1.9	2.4	2.9	3.5	3.5	3.5	3.5	3.5	3.5	29.5
<b>Total Funding Sources</b>	<b>\$ 464.5</b>	<b>\$ 500.2</b>	<b>\$ 505.4</b>	<b>\$ 507.6</b>	<b>\$ 518.7</b>	<b>\$ 516.3</b>	<b>\$ 520.3</b>	<b>\$ 520.3</b>	<b>\$ 518.8</b>	<b>\$ 518.8</b>	<b>\$ 5,090.9</b>
<b>RhodeWorks Annual Funding Gap</b>											
	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Total</b>
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 5,090.9
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	5,482.9
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ (392.0)</b>
<b>Funding Option: \$385m Bond, \$45m Tolling Annually</b>											
<b>Additional Funding Sources</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Total</b>
New GARVEE	\$ 385.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 385.0
New Debt Service	-	(19.3)	(19.3)	(19.3)	(19.3)	(19.3)	(19.3)	(19.3)	(19.3)	(65.9)	(219.9)
Tolling Revenue	-	-	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	360.0
Tolling Operations	-	-	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(35.2)
Annual Funding Surplus	372.1	(67.0)	(101.1)	(95.4)	(64.1)	(44.0)	36.0	36.0	36.0	(10.6)	97.9
<b>Cumulative Funding Surplus</b>	<b>\$ 372.1</b>	<b>\$ 305.0</b>	<b>\$ 204.0</b>	<b>\$ 108.6</b>	<b>\$ 44.5</b>	<b>\$ 0.6</b>	<b>\$ 36.6</b>	<b>\$ 72.6</b>	<b>\$ 108.5</b>	<b>\$ 97.9</b>	<b>\$ 97.9</b>
<b>15-Year Debt service @ 5% (interest only 2017-2024)</b>									<b>Debt Service Remaining</b>		<b>\$ (395.18)</b>
									<b>Total Debt Service</b>		<b>\$ (615.0)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIPEC Calculations.

**Appendix Table 2: \$330m Bond, \$45m Tolling Revenue Annually (\$ millions)**

RhodeWorks Annual Expenditure											
Expenditure Category	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Bridge Maintenance + Capital	\$ 150.9	\$ 168.6	\$ 193.9	\$ 154.6	\$ 125.1	\$ 119.2	\$ 104.9	\$ 107.7	\$ 83.8	\$ 102.2	\$ 1,311.0
Pavement Maintenance + Capital	64.7	74.1	60.0	71.8	72.1	57.2	74.8	80.6	94.6	131.8	781.7
Transit Operations + Capital (RIDOT)	10.9	12.1	12.3	14.8	15.5	15.6	20.7	21.8	22.0	22.5	168.2
Route 6/10 Reconstruction (State)	-	20.0	100.0	100.0	100.0	80.0	-	-	-	-	400.0
Existing Debt Service	67.4	68.2	61.8	91.6	98.5	105.7	90.6	84.0	69.7	35.4	772.9
Other Capital, Maintenance, Operations	183.4	204.9	199.8	191.4	193.0	204.0	214.6	211.5	234.1	212.3	2,049.1
<b>Total Expenditure</b>	<b>\$ 477.4</b>	<b>\$ 547.9</b>	<b>\$ 627.8</b>	<b>\$ 624.3</b>	<b>\$ 604.1</b>	<b>\$ 581.6</b>	<b>\$ 505.7</b>	<b>\$ 505.7</b>	<b>\$ 504.2</b>	<b>\$ 504.2</b>	<b>\$ 5,482.9</b>

Projected Annual Funding for RIDOT under Current Law											
Funding Source	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
Total RIDOT TIP Funding Sources	\$ 477.5	\$ 548.0	\$ 627.8	\$ 644.3	\$ 654.1	\$ 631.7	\$ 605.7	\$ 605.7	\$ 584.2	\$ 504.2	\$ 5,883.2
Toll Bond Proceeds	(25.0)	(45.0)	(125.0)	(125.0)	(100.0)	(80.0)	-	-	-	-	(500.0)
FTA New Starts (6/10 Transit)	-	-	-	(20.0)	(50.0)	(50.0)	(100.0)	(100.0)	(80.0)	-	(400.0)
RICAP for Projects	-	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(20.0)	(180.0)
FAST Act Apportionments	10.7	15.3	20.2	25.4	31.1	31.1	31.1	31.1	31.1	31.1	258.2
FAST Act Transit	1.3	1.9	2.4	2.9	3.5	3.5	3.5	3.5	3.5	3.5	29.5
<b>Total Funding Sources</b>	<b>\$ 464.5</b>	<b>\$ 500.2</b>	<b>\$ 505.4</b>	<b>\$ 507.6</b>	<b>\$ 518.7</b>	<b>\$ 516.3</b>	<b>\$ 520.3</b>	<b>\$ 520.3</b>	<b>\$ 518.8</b>	<b>\$ 518.8</b>	<b>\$ 5,090.9</b>

RhodeWorks Annual Funding Gap											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
RhodeWorks Funding Sources	\$ 464.5	\$ 500.2	\$ 505.4	\$ 507.6	\$ 518.7	\$ 516.3	\$ 520.3	\$ 520.3	\$ 518.8	\$ 518.8	\$ 5,090.9
RhodeWorks Expenditure	477.4	547.9	627.8	624.3	604.1	581.6	505.7	505.7	504.2	504.2	5,482.9
<b>Annual Funding Gap</b>	<b>\$ (12.9)</b>	<b>\$ (47.8)</b>	<b>\$ (122.4)</b>	<b>\$ (116.7)</b>	<b>\$ (85.4)</b>	<b>\$ (65.3)</b>	<b>\$ 14.7</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ 14.6</b>	<b>\$ (392.0)</b>

Funding Option: \$330m Bond, \$45m Tolling Annually											
Additional Funding Sources	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
New GARVEE	\$ 15.0	\$ 50.0	\$ 85.0	\$ 85.0	\$ 55.0	\$ 40.0	\$ -	\$ -	\$ -	\$ -	\$ 330.0
New Debt Service	-	(0.8)	(3.3)	(7.5)	(11.8)	(14.5)	(16.5)	(16.5)	(16.5)	(56.5)	(143.7)
Tolling Revenue	-	-	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	360.0
Tolling Operations	-	-	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(4.4)	(35.2)
Annual Funding Surplus	2.1	1.5	(0.1)	1.4	(1.6)	0.8	38.8	38.7	38.7	(1.2)	119.1
<b>Cumulative Funding Surplus</b>	<b>\$ 2.1</b>	<b>\$ 3.5</b>	<b>\$ 3.5</b>	<b>\$ 4.8</b>	<b>\$ 3.3</b>	<b>\$ 4.1</b>	<b>\$ 42.8</b>	<b>\$ 81.6</b>	<b>\$ 120.3</b>	<b>\$ 119.1</b>	<b>\$ 119.1</b>

<b>15-Year Debt service @ 5% (interest only 2017-2024)</b>	<b>Debt Service Remaining</b>	<b>\$ (338.72)</b>
	<b>Total Debt Service</b>	<b>\$ (482.4)</b>

Source: RIDOT, "Rhode Works Ten-Year Transportation Improvement Program (TIP) Proposal for FY 2016 - FY 2025," October 27, 2015; RIPEC Calculations.